

REMARKS

Claims 2-26, 32 and 35-41 are pending in this application. Claims 2-26, 32 and 35-41 stand rejected. Reconsideration and further examination of the subject patent application in light of the present Amendment and Remarks is respectfully requested.

Rejections Under 35 U.S.C. §112

Claims 11-17 and 37 stand rejected under 35 U.S.C. §112, first paragraph. In particular, the Office Action asserts that the phrase “the test signal is generated at a plurality of different frequencies” is not described in the specification. In response, the phrase has been deleted from claims. Since the phrase has been deleted, the rejections are now improper and should be withdrawn.

Rejections Under 35 U.S.C. §102

Claims 7, 18-20 and 22-26 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. Publ. No. US 2003/0021188 to Baranek et al. Applicant respectfully traverses the rejections.

In response, independent claim 7 has been further limited to “circuits coupled to respective microphones including circuitry that detects a received signal, analyzes the received signal by comparing a depth of modulation thereof with a test signal in each of a plurality of frequency bands, evaluates intelligibility of audio received by the respective microphones based upon the comparative depth of modulation where reduction in modulation depth of the received signal is associated with loss of intelligibility, the circuits each include a network output port and generates an indicator of intelligibility on a per microphone basis.” Independent claim 18 has

been similarly limited. The detection, analysis, comparison, evaluation and generation of the indicator of intelligibility are discussed in paragraph [0007] of the specification. As explicitly stated, "Reductions in modulation depth of received signals are associated with loss of intelligibility" (specification, par. [0007]).

Claims 7, 18-20 and 22-26 are now clearly differentiated over Baranek et al. For example, rather than evaluating "intelligibility of audio received by the respective microphones based upon the comparative depth of modulation" Baranek et al. merely searches for a sonic wave created by gunfire. In this regard, Baranek et al. explicitly states that "If the signal received and transmitted by the transducer is of a sufficient decibel level and for a sufficient time duration, it is determined by the detector to be a firearm discharge" (Baranek et al., par. [0014]).

However, as would be clearly understood by those of skill in the art, decibel level and duration of sonic waves has nothing to do with determining intelligibility. For example, an audible signal having a low decibel level (e.g., barely above a whisper) and high level of modulation would clearly have a higher level of intelligibility than a gunshot having a high decibel level delivered as a sonic wave.

Moreover, Webster's New Third International Dictionary defines "modulation" as the variation of a characteristic (as amplitude, frequency, or phase) of a carrier or signal in a periodic or intermittent manner for the transmission of intelligence." The sonic wave created by a gunshot neither contains modulation or transmits intelligence.

For any of the above reasons, Baranek et al. does not do the same or any similar thing as that of the claimed invention. Since Baranek et al. does not do the same or any similar thing as that of the claimed invention, the rejections are now improper and should be withdrawn.

Rejections Under 35 U.S.C. §103

Claims 4-6, 9, 10, 32, 35, 36 and 38-41 stand rejected under 35 U.S.C. §103(a) as being obvious over by U.S. Pat. Publ. No. US 2003/0021188 to Baranek et al. and U.S. Pat. Publ. No. US 2003/0128850 to Kimura et al. Applicant respectfully traverses these rejections.

In response, claim 4 has been further limited to “circuits coupled to respective microphones including circuitry that detects a received signal, that analyzes the received signal by comparing a depth of modulation thereof with a test signal in each of a plurality of frequency bands, that evaluates intelligibility of audio received by the respective microphones based upon the comparative depth of modulation where reduction in modulation depth of the received signal is associated with loss of intelligibility and generates an indicator of intelligibility on a per microphone basis, the circuits each include a network output port and circuitry that produces prestored speech intelligibility test signals.” Independent claims 9, 32 and 40 have been similarly limited. The detection, analysis, comparison, evaluation and generation of the indicator of intelligibility are discussed in paragraph [0007] of the specification. As explicitly stated, “Reductions in modulation depth of received signals are associated with loss of intelligibility” (specification, par. [0007]).

Claims 4-6, 9, 10, 32, 35, 36 and 38-41 are now clearly differentiated over Baranek et al. and Kimura et al. For example, rather than evaluating “intelligibility of audio received by the respective microphones based upon the comparative depth of modulation” Baranek et al. merely searches for a sonic wave created by gunfire. In contrast, Kimura et al. is merely directed to the

damping of reverberation of loudspeaker signals in closed spaces by modifying a broadcast content.

In this regard, Baranek et al. explicitly states that “If the signal received and transmitted by the transducer is of a sufficient decibel level and for a sufficient time duration, it is determined by the detector to be a firearm discharge” (Baranek et al., par. [0014]). However, as would be clearly understood by those of skill in the art, decibel level and duration of sonic waves has nothing to do with determining intelligibility. For example, an audible signal having a low decibel level (e.g., barely above a whisper) and high level of modulation would clearly have a higher level of intelligibility than a gunshot having a high decibel level delivered as a sonic wave.

Moreover, Webster’s New Third International Dictionary defines “modulation” as the variation of a characteristic (as amplitude, frequency, or phase) of a carrier or signal in a periodic or intermittent manner for the transmission of intelligence.” The sonic wave created by a gunshot neither contains modulation or transmits intelligence.

Moreover, modifying Baranek et al. to modulate a sonic wave would involve a fundamental change in the way Baranek et al. operates. Since such a modification would change the way Baranek et al. operates, there is no teaching, suggestion or other reason to modify Baranek et al.

For any of the above reasons, the combination of Baranek et al. and Kimura et al. does not teach or suggest each and every limitation of the claimed invention. Since the combination does not teach or suggest each and every limitation, the rejections are now improper and should be withdrawn.

Claim 37 stands rejected under 35 U.S.C. §103(a) as being obvious over by U.S. Pat. Publ. No. US 2003/0021188 to Baranek et al. in view of U.S. Pat. Publ. No. US 2003/0128850 to Kimura et al. and U.S. Pat. No. 6,760,451 to Craven et al. Applicant respectfully traverses these rejections.

In response, claim 37 has been further limited to “circuits coupled to respective acoustic sensors including circuitry that detects the received signals, analyzes the received signals by comparing a depth of modulation with the test signals in each of a plurality of frequency bands, evaluates intelligibility of audio received by the respective acoustic sensors based upon the comparative depth of modulation where reduction in modulation depth of the received signals is associated with loss of intelligibility and generates an indicator of intelligibility on a per acoustic sensor basis.” The detection, analysis, comparison, evaluation and generation of the indicator of intelligibility are discussed in paragraph [0007] of the specification. As explicitly stated, “Reductions in modulation depth of received signals are associated with loss of intelligibility” (specification, par. [0007]).

Claim 37 is now clearly differentiated over Baranek et al., Kimura et al. and Craven et al. For example, rather than evaluating “intelligibility of audio received by the respective microphones based upon the comparative depth of modulation” Baranek et al. merely searches for a sonic wave created by gunfire. In contrast, Kimura et al. is merely directed to the damping of reverberation of loudspeaker signals in closed spaces by modifying a broadcast content. Craven et al. is directed to compensating filters.

In this regard, Baranek et al. explicitly states that “If the signal received and transmitted by the transducer is of a sufficient decibel level and for a sufficient time duration, it is

determined by the detector to be a firearm discharge” (Baranek et al., par. [0014]). However, as would be clearly understood by those of skill in the art, decibel level and duration of sonic waves has nothing to do with determining intelligibility. For example, an audible signal having a low decibel level (e.g., barely above a whisper) and high level of modulation would clearly have a higher level of intelligibility than a gunshot having a high decibel level delivered as a sonic wave.

Moreover, Webster’s New Third International Dictionary defines “modulation” as the variation of a characteristic (as amplitude, frequency, or phase) of a carrier or signal in a periodic or intermittent manner for the transmission of intelligence.” The sonic wave created by a gunshot neither contains modulation or transmits intelligence.

Moreover, modifying Baranek et al. to modulate a sonic wave would involve a fundamental change in the way Baranek et al. operates. Since such a modification would change the way Baranek et al. operates, there is no teaching, suggestion or other reason to modify Baranek et al.

For any of the above reasons, the combination of Baranek et al. Kimura et al. and Craven et al. does not teach or suggest each and every limitation of the claimed invention. Since the combination does not teach or suggest each and every limitation, the rejections are now improper and should be withdrawn.

Claims 11-17 stands rejected under 35 U.S.C. §103(a) as being obvious over by U.S. Pat. Publ. No. US 2003/0021188 to Baranek et al. in view of U.S. Pat. No. 6,760,451 to Craven et al. Applicant respectfully traverses these rejections.

In response, claim 11 has been further limited to “detecting the sensed signal, analyzing the sensed signal by comparing a depth of modulation thereof with the test signal in each of a plurality of frequency bands, and evaluating the intelligibility of the sensed speech intelligibility test signal based upon the comparative depth of modulation where reduction in modulation depth of the sensed test signal is associated with loss of intelligibility.” The detection, analysis, comparison, evaluation and generation of the indicator of intelligibility are discussed in paragraph [0007] of the specification. As explicitly stated, “Reductions in modulation depth of received signals are associated with loss of intelligibility” (specification, par. [0007]).

Claims 11-17 is now clearly differentiated over Baranek et al., and Craven et al. For example, rather than evaluating “intelligibility of audio received by the respective microphones based upon the comparative depth of modulation” Baranek et al. merely searches for a sonic wave created by gunfire. In contrast, Craven et al. is directed to compensating filters.

In this regard, Baranek et al. explicitly states that “If the signal received and transmitted by the transducer is of a sufficient decibel level and for a sufficient time duration, it is determined by the detector to be a firearm discharge” (Baranek et al., par. [0014]). However, as would be clearly understood by those of skill in the art, decibel level and duration of sonic waves has nothing to do with determining intelligibility. For example, an audible signal having a low decibel level (e.g., barely above a whisper) and high level of modulation would clearly have a higher level of intelligibility than a gunshot having a high decibel level delivered as a sonic wave.

Moreover, Webster's New Third International Dictionary defines "modulation" as the variation of a characteristic (as amplitude, frequency, or phase) of a carrier or signal in a periodic or intermittent manner for the transmission of intelligence." The sonic wave created by a gunshot neither contains modulation or transmits intelligence.

Moreover, modifying Baranek et al. to modulate a sonic wave would involve a fundamental change in the way Baranek et al. operates. Since such a modification would change the way Baranek et al. operates, there is no teaching, suggestion or other reason to modify Baranek et al.

For any of the above reasons, the combination of Baranek et al. and Craven et al. does not teach or suggest each and every limitation of the claimed invention. Since the combination does not teach or suggest each and every limitation, the rejections are now improper and should be withdrawn.

Claims 2 and 3 stand rejected under 35 U.S.C. §103(a) as being obvious over by U.S. Pat. Publ. No. US 2002/0015502 to Albus et al. in view of U.S. Pat. No. 5,635,903 to Koike et al. Applicant respectfully traverses these rejections.

In response, claim 2 has been further limited to "circuits coupled to respective microphones including circuitry that detects a received signal, analyzes the received signal by comparing a depth of modulation thereof with a test signal in each of a plurality of frequency bands, evaluates intelligibility of audio received by the respective microphones based upon the comparative depth of modulation where reduction in modulation depth of the received signal is associated with loss of intelligibility and generates an indicator of intelligibility on a per microphone basis." The detection, analysis, comparison, evaluation and generation of the

indicator of intelligibility are discussed in paragraph [0007] of the specification. As explicitly stated, "Reductions in modulation depth of received signals are associated with loss of intelligibility" (specification, par. [0007]).

Claims 2 and 3 are now clearly differentiated over the combination of Albus et al. and Koike et al. For example, Albus et al. is merely directed to an automobile sound system that reduces interference signals. Similarly, Koike et al. is directed to a sound generator for generating simulated sounds for an electric vehicle.

Nowhere within the combination of Albus et al. or Koike et al. is there any teaching or suggestion of "circuits coupled to respective microphones including circuitry that detects a received signal, analyzes the received signal by comparing a depth of modulation thereof with a test signal in each of a plurality of frequency bands, evaluates intelligibility of audio received by the respective microphones based upon the comparative depth of modulation where reduction in modulation depth of the received signal is associated with loss of intelligibility and generates an indicator of intelligibility on a per microphone basis." Since Albus et al. and Koike et al. fail to teach or suggest these features, the combination fails to teach or suggest each and every claim limitation. Since the combination fails to teach or suggest each and every claim limitation, the rejections are improper and should be withdrawn.

Closing Remarks

For the foregoing reasons, applicant submits that the subject application is in condition for allowance and earnestly solicits an early Notice of Allowance. Should the Primary Examiner be of the opinion that a telephone conference would expedite prosecution of the subject

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application, the Primary Examiner is respectfully requested to call the undersigned at the below-listed number.

The Commissioner is hereby authorized to charge any additional fee which may be required for this application under 37 C.F.R. §§ 1.16-1.18, including but not limited to the issue fee, or credit any overpayment, to Deposit Account No. 23-0920. Should no proper amount be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise

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improper or informal, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 23-0920. *(If filed by paper, a duplicate copy of this sheet(s) is enclosed).*

Respectfully submitted,

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